

Collaboration as the Basis of Learning and Development for Individuals and Teams

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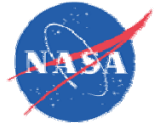
Innovation through Global Collaboration: A New Source of Competitive Advantage — Harvard Business Review August 2007

*Why is collaboration important?
What research says.....*

Team works: Capitalize on Collaboration to Improve Safety, Satisfaction, and Outcomes: Update on Anticoagulation Services — Joint Commission Resources, December 2000

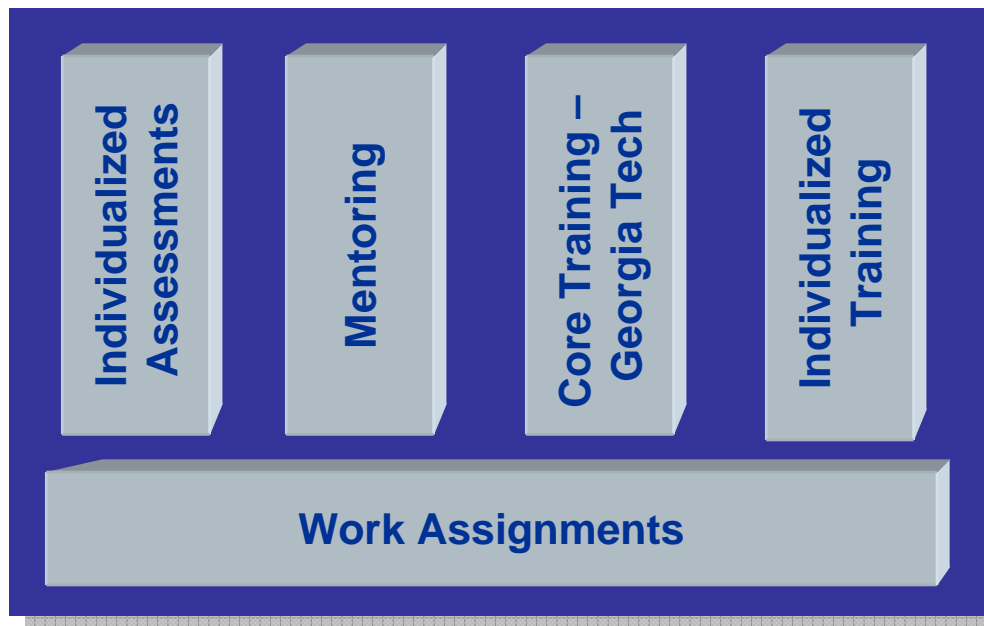
Cisco Study Reveals Collaboration Among Channel Partners Generates 31 Percent of Their Revenue — Cisco, April 2008

How does collaboration yield results? By fostering innovation. In fact, true innovation is virtually impossible without collaboration. — IBM January 2008



Program/Project Management Development

Development Program Components



Success Factors

Experience is foundational to development

Development is individualized based on person's needs

Senior Management involvement is essential

Existing resources are leveraged

Advisory Council of former NASA Program and Project Managers was integral to designing critical elements of PPMD

Emphasis is on leadership, business and project management competencies

27 Participants, 7 from other Centers (GRC, KSC, LaRC and SSC)

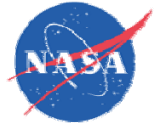
22 Mentors who are prior or current Program or major Project Managers



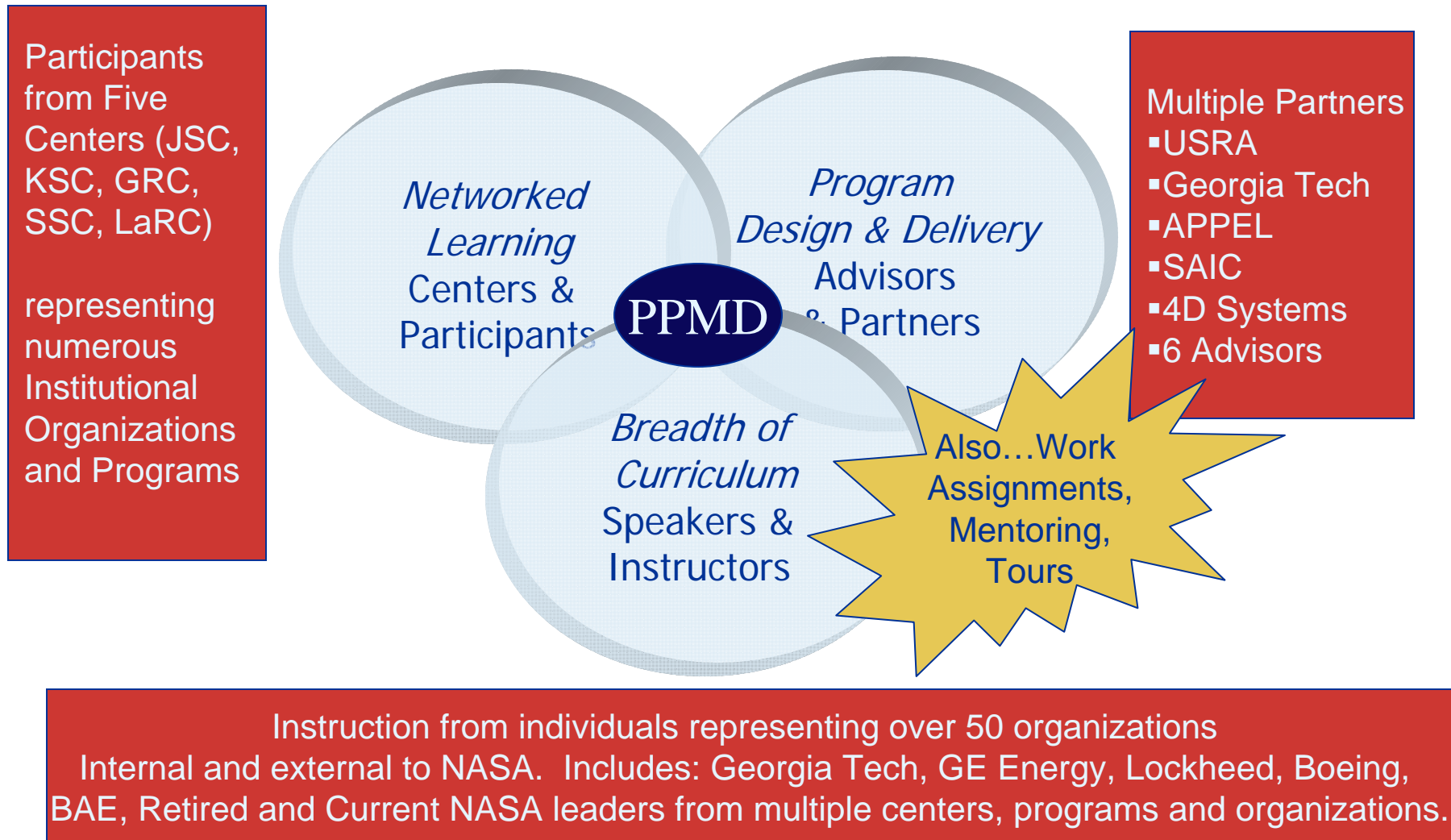
Why was collaboration important to PPMD?

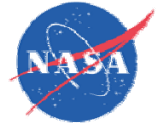
- Understanding others perspectives is seen as critical for a Program/Project Manager.
- Desire to facilitate discussions and learning that might lead to future innovation.
- Build relationships with other Programs and Centers.

Collaboration is synergistic. When we collaborate successfully we perform at a higher level than we might otherwise. When we optimize interpersonal and inter-team interactions, we reduce the barriers to getting work accomplished. Much like an automobile, when the parts work together, the car performs better. Gary Pollice, Professor of Practice, Worcester Polytechnic Institute



Collaboration Applied to PPMD





Opportunities and Recommendations

- **Individuals**

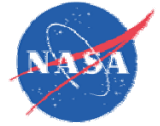
- Participate in training and conferences
- Be mentored, formally or informally
- Mentor another, formally or informally
- Broaden your work experience to seek to understand other perspectives
- Build/leverage your network

- **Teams**

- Guest speakers
- Benchmarking trips
- Tours

1. Develop a collaboration strategy
2. Organize your team and partners for collaboration
3. Build “Collaborative Capabilities” in yourself and your team

Source: Innovation through Global Collaboration: A new Source of Competitive Advantage, Harvard Business Review



PPMD Profile – Aero to Space Flight Management

~15 Years Project Management Experience



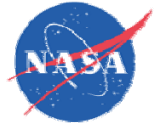
Contributor to Space Flight Development



- Understanding of Space Flight Development Culture through PPMD Collaboration and Sponsorship
 - Relationship Development
 - Work Assignment
- Project and Institution Collaboration

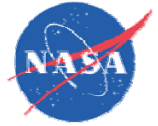


Profile of Anita Liang



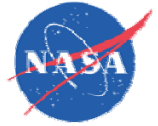
PPMD Profile – Overview

- Selected to participate in the PPMD by the Glenn Center Director as one of two Glenn participants
- Given the opportunity to work with Mr. Wayne Hale as PPMD mentor
- Attended PPMD training classes, participated in two customized interviews, led one focused project, and participated in a three-month work assignment at JSC Shuttle Program Office
- Transitioned at Glenn from the position of Associate Director for Aeronautics to Deputy Director of Facilities and Test



Lessons Learned

- PPMD participants have benefited the most from team interactions and discussions with the Mentor. PPMD mentors and panel experts have vast experience.
- Work Assignment at the Shuttle Flight Integration Office provided insight into the rigor, structure, and tempo of space flight operation.
 - Attentions are made to the interactions between the various NASA centers, NASA management and Contractor management, and various Control Boards
 - Attention is made to the management of the Team Dynamics (Program Offices, Mission Operations, Astronauts Office, Shuttle Processing)
- Transition to the Deputy of Facilities and Test Directorate at GRC
 - Implementation organizations are impacted by requirements changes and timeliness of project communication
 - Team building and crisp definition of roles and responsibilities are important for complex flight product development
 - Projects would benefit from early involvement of implementation organizations in all phases of project development
 - Projects depend on a healthy institution



Recommendations

Emotional Intelligence and Creative Collaboration ---

Be Resourceful and Open to Change (New Experiences, New Assignments, Target Training)

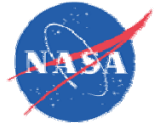
Be Open to New Ideas

Be Inclusive

Conduct Frequent Self Assessment (540 Feedback, 4D Assessment)

Take Time to Plan and Time to Reflect (although it takes work)

Asking for help is not a Weakness



One Participant's View of PPMD

- Goal:

This training effort is designed to support an employee's individual development. These individuals may be candidates to move into (SSP, ISS, or CEV) Program or Project Office Management positions.

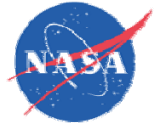
- Course Modules

1. Leadership
2. Resource/Financial Management
3. Contract/Contractor Management
4. System Engineering
5. Project Management



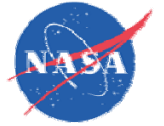
One Participant's View of PPMD

- **“Collaboration” Development Activities:**
 1. Initiate a relationship with a mentor.
 2. Become a mentor.
 3. Actively seek work assignments that significantly strengthen your skills in leadership and program/project management.
 4. Participate in the PPMD core training and activities.
 5. PPMD Book Club
 6. Complete the Congressional Operations Course.
 7. Social activities with PPMD participants.
 8. Transition from Project side to Institutional side.



One Participant's View of PPMD

- Collaborations while on rotation to Stevens Institute of Technology:
 - Trip to Washington DC to participate in meeting with Northrup Grumman and the National Security Administration (NSA) on Systems Management and Engineering techniques/approaches.
 - Worked with Research Professor @ SIT, to discuss System Engineering research work on Systems Modeling and its application to NASA projects.
 - Participated in the US-India Business Development Session hosted by the Indian Institute of Technology Delhi.
 - Participate in Strategic Planning Meeting for the SIT School of Systems and Enterprises (SSE). SSE was determining their vision, core values, strategic intent, where they are, and where they want to be.
 - Meeting with Senior Associate Director of Cooperative Education at Stevens Institute of Technology to discuss Coop requirements for SIT at the Johnson Space Center. Also had a student (Stephen Yanczura) currently doing a co-op tour with Hamilton Sundstrand (Houston) joined us in the meeting.
 - Meeting with Associate Professor Department of Mechanical Engineering. This individual was former JPL employee and is now at Stevens Institute of Technology doing research on Piezoelectric Electric/Nano Technology.
 - Meeting with 3 New Jersey High School Students and 1 Teacher who are part of the New Jersey Space Grant. The students are working on a 6 week space related project.



One Participant's View of PPMD

“Collaboration, Collaboration, Collaboration!”

Don't be afraid to ask for help. Look outside your own organization and/or company. The answers may reside in places you never imagined, such as industry, government, universities, and the general public.